

MIT OFFICER KILLED, MARATHON BOMBERS RESPONSIBLE

First death of a night of violence in Cambridge and Watertown; intense manhunt ensued

By Greg Steinbrecher

STAFF REPORTER

UPDATED 5:30 A.M. 4/19/13

Yesterday evening, terrible events unfolded on and near MIT's campus. An MIT Police officer, who is still unnamed, was reported shot at 10:48 p.m. near the Stata Center, and was transported to Massachusetts General Hospital where he was pronounced dead.

Shortly after, investigation into an armed carjacking reported along Memorial Drive led west into Watertown, where two suspects attacked police officers with explosives and stolen weapons. As of press time — 5:30 a.m. — only one suspect has been apprehended; he was shot by police officers and pronounced dead after transport to a local hospital. The other suspect remains at large. Police have secured a perimeter and will resume the search come daylight.

The first tremor of Thursday night's tragedies arrived around 10:25 p.m. when a postdoctoral student working in Building 76 called the MIT Police to report loud noises, possibly gunshots. At 10:31 p.m. the fallen officer was discovered by another MIT officer between the Stata Center and Building 76. By 12:15 a.m. it was confirmed that the officer

had been killed.

As warnings and comfort spread rapidly via social media, the night turned from a single tragedy into a firestorm. Around 12:25 a.m. reports began to arrive that a carjacking victim had been released at 816 Memorial Drive, near the corner with River Street. At press time, connection to the Stata shooting remains unconfirmed.

At 12:45 a.m. explosives were detonated in Watertown, which borders Cambridge to the west. Information over the ensuing hours was chaotic, incomplete, and terrifying. But hopes that the reports were simply overblown, as early reports so often are, faded as police radio confirmed reports of injured officers, a stolen Massachusetts State Police SUV, and the use of long guns and explosives, presumed to have been stolen from the SUV. There were two suspects reported.

By 1:00 a.m., one suspect was in custody and a second was detained. The first suspect had an explosive on his chest that exploded when apprehended. Reports were scattered, with police from MIT, Cambridge, Boston, Brookline, Boston University, the Massachusetts State Police, and others responding to the scene. Several minutes later, fears of more improvised explosive devices led to an



SAMUEL T. WHITTEMORE

Photo taken at the scene of the fatal shooting of the MIT police officer late yesterday night near 32 Vassar Street.

order to all police officers: Turn off your cell phones immediately. As members of the media arrived on the scene, they were subject to the same requirement. Fortunately, any ex-

plosions after this point are reported to have been controlled detonations, not attacks.

Shooting, Page 20



Tragedy in Boston

Stories of hope and inspiration from MIT in the wake of Marathon bombings

pg. 12

Bombings near Marathon finish

A day of celebration for the runners turns tragic as two bombs explode near the finish line on Monday afternoon

By Jessica J. Pourian

CONTRIBUTING EDITOR

The following story was completed prior to the events early this morning. At the time of publication, according to the Boston Globe, it appears that one suspect in the Boston Marathon bombings has been captured. The two suspects were chased to Watertown by police, and one suspect is still on the loose. It is unclear if these events are related to the shooting near the Stata Center. For more information, see our coverage in this issue.

Two bombs went off Monday at 2:50 p.m. near the finish line of the 117th Boston Marathon, killing three people and injuring over 170. The FBI have traced the attacks to two suspects, who were seen by security cameras carrying large bags on Monday afternoon. It is unknown

whether the plot was domestic or foreign.

The blasts came near the end of the marathon, over four hours in, after many runners had passed the finish line. Thousands, however, were still running.

Jonathan S. Katz G, who was running in the marathon, was around Cleveland Circle and Boston College when the bomb went off. "I went by mile 23, 24, and 25, all the water stations, all the volunteers, it was business as usual. You couldn't notice anything," he said. But when he got to Storrow Drive, he ran into a bottleneck. At first he thought people were just standing in the path of the marathon. "No one said anything," Katz recalls.

Lauren D. Lo '13 and Sarah L. Sprague '13, actually heard the explosion. After they finished the race,

they "heard a really loud thunder clap." Lo initially brushed it off as a construction sound, but when she heard the second one, "we knew something was wrong," she said. As she and Sprague tried to move towards Kenmore and the AXO house (with which both women are affiliated), they saw people running in the opposite direction.

"Some were crying, others were frantically trying to use their cell phones," Lo recounted. "I stopped a stranger and asked what had happened. She told me that two explosions had gone off by the finish line." Lo and Sprague realized they needed to get home to safety immediately, but as they passed Mass Ave. and Newbury Street, they were startled by a policewoman near an abandoned postal truck scream-

Marathon, Page 11

Three alerts in wake of bombings

In the wake of the bombings at the Boston Marathon on Monday afternoon, there have been several reports of suspicious packages found on campus. Vice President and Secretary of the Corporation Kirk D. Kolenbrander sent an email to all of MIT campus on Tuesday instructing people to not leave their belongings unattended in public places and to call the MIT Police immediately if they see something suspicious.

In the past three days, three emergency alerts have gone out to campus regarding suspicious packages. The first alert was on Tuesday at approximately 1:03 p.m. regarding a bag left in E51, forcing an evacuation of the building. Several members of the MIT community also received automated phone calls in response to this emergency alert, alongside the standard text messages and email notifications. The second alert went out on Wednesday at approximately 2:32 p.m. about a suspicious package in E38 (MIT Press Bookstore in Kendall Square), again forcing an evacuation. Both incidents were given an all clear less than 15 minutes after the initial alert. At 4:33 a.m. this morning, students received another suspicious package was reported at 500 Memorial Drive (Next House), but was also cleared 20 minutes later.

In an email to the MIT community, Kolenbrander also stressed people to "show great sensitivity in how we discuss who may have been responsible for this act and what might have motivated it."

"President Reif described the notion of 'one MIT' very simply," Kolenbrander said. "I think it bears repetition today: 'We are all in this great enterprise together.'"

—Stan Gill

IN SHORT

Wear black today to support the MIT Police officer killed in the line of duty.

Classes are cancelled today. Any absence today will be considered excused.

Applications for TBP Summer Service and Engineering Fellowships are now open. Apply

for a chance to earn a service grant of up to \$5000. Applications are due on April 22. Visit <http://web.mit.edu/tbp/www/fellowships.shtml> for more details.

Drop date is next Thursday, April 25th.

Send news information and tips to news@tech.mit.edu.

NEW GSC OFFICERS ELECTED

Newly-elected Graduate Student Council officers to rebrand the GSC.

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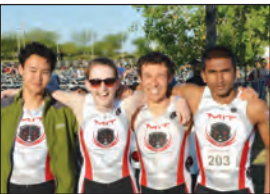
IAMAMIWHOAMI

Mysterious musical project originating on Youtube releasing new album.

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JOINING A SORORITY

Taking a risk. CAMPUS LIFE, p. 8



MIT COMPETES IN TRIATHLON

Club team sends four to compete at Nationals.

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A RUNNER'S PERSPECTIVE

Bonding us together, strengthening our resolve.

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Israeli officials stress readiness for lone strike on Iran

By Isabel Kershner
THE NEW YORK TIMES

JERUSALEM — With Chuck Hagel scheduled to begin his first visit to Israel as secretary of defense on Sunday, Israeli defense and military officials issued explicit warnings this week that Israel was prepared and had the capability to carry out a lone military strike against Iran’s nuclear facilities.

Prime Minister Benjamin Netanyahu also spoke of dealing with the Iranian nuclear threat in an interview with the BBC broadcast on Thursday. Israel has “different vulnerabilities and different capabilities” than the United States, he said. “We have to make our own calculations, when we lose the capacity to defend ourselves

by ourselves.”

Israeli officials have been expressing growing frustration with what they view as ineffective international efforts to halt what Israel and the West see as an Iranian quest for nuclear weapons. Despite economic sanctions and rounds of diplomatic talks, the officials say, the Iranian centrifuges continue to spin.

Yuval Steinitz, Israel’s minister of strategic affairs, intelligence, and international relations, said in an interview that Iran was abusing the diplomatic process to further its uranium enrichment program and that it was “high time” for the international community to issue Iran “a deadline or a timetable, or even a military threat.”

Iran, according to Steinitz, is

about halfway to reaching the “red line” that Netanyahu drew on a cartoon-like diagram of a bomb before the United Nations last fall, representing the amount of medium-enriched uranium Iran would need to build a bomb. Iran has denied that it intends to build a nuclear weapon and has argued that it needs the enriched uranium for energy and medical uses.

The chief of staff of Iran’s armed forces, Maj. Gen. Hassan Firouzabadi, on Thursday dismissed Israel’s threats as bluster that should not be taken seriously. Speaking on the sidelines of the Army Day parade in Tehran, he added that the United States, deterred by Iran’s military might, would not enter into war with Iran, according to the state-controlled Islamic Republic News Agency.

US indicts Guinea-Bissau’s military chief in drug case

By Adam Nossiter
THE NEW YORK TIMES

DAKAR, Senegal — The head of Guinea-Bissau’s armed forces, Gen. Antonio Injai, has been indicted by federal prosecutors in New York on cocaine and weapons-trafficking charges, the U.S. attorney’s office in Manhattan said Thursday, part of an ambitious U.S. operation targeting some of the most powerful figures in a country long considered a major haven for drug smuggling.

According to the indictment,

Injai told informants for the U.S. Drug Enforcement Administration, who were posing as rebels with the Revolutionary Armed Forces of Colombia, or FARC, that he was willing to store tons of cocaine and ship it to the United States. He is also accused of agreeing to buy weapons for the FARC, which is designated a terrorist organization by the United States.

Two weeks ago, an ally of his, the former head of Bissau’s navy, was indicted on similar drug charges after being arrested in a sting off the coast of West Africa.

For years, Guinea-Bissau has been considered one of the world’s premier examples of a narco-state, one where the government hierarchy is deeply implicated in the drug trade. But the cases bring those long-standing assertions quite a step further, offering what prosecutors describe as clear evidence of official involvement in trafficking, and aiming to haul senior figures into court.

Unlike the former naval boss, who was lured into a fake meeting on the high seas to be arrested, Injai remains free in Bissau.

South Korea police say spy service tried to sway election

SEOUL, South Korea — At least two agents from the South Korean National Intelligence Service illegally posted comments online criticizing the political opposition ahead of the December presidential election, the police said on Thursday in an interim report on an investigation into accusations of political meddling.

The police said it remained unclear whether the two agents were part of an operation to influence the Dec. 19 election, as the opposition Democratic United Party claimed. But the findings were a blow to President Park Geun-hye, who had vehemently accused her opposition rival, Moon Jae-in, of a political offensive when his party first made accusations of illegal campaign activities by intelligence agents.

Park, the governing party candidate, won the election by a margin of one million votes.

The case revived long-held suspicions among South Koreans over the role of the National Intelligence Service. The country’s former military dictators — including Park’s father, the late President Park Chung-hee — had used the agency, once known by its infamous acronym, KCIA, to torture and silence dissidents and influence domestic politics.

After the country democratized in the early 1990s, the agency, which has changed its name a few times, repeatedly vowed not to intervene in politics.

—Choe Sang-Hun, The New York Times

In developing nations, a contest for improvement

SERRAVAL, France — At a school in a rundown suburb of Dakar, Senegal, the toilets had been out of order for months. The boys urinated against the outside walls, the girls headed behind the building. They had no way to wash their hands.

That changed after the directors of the school turned to a new way to alert the authorities — and their watchdogs — to the problem. Shortly after they did so, the toilets were fixed.

“For us, it’s not just to show that there is a capacity in Africa to develop good applications,” said Daniel Annerose, chief executive of Manobi, a mobile technology company in Dakar that developed the reporting system.

The system lets teachers, students, or parents report problems with sanitation facilities at more than 2,000 schools across Senegal.

Called mSchool, it is one of three winners of a competition organized by the World Bank to identify promising solutions for a striking discrepancy in access to high and low technologies in developing countries. Six billion of the seven billion people around the world have mobile phones, while only 4.5 billion have access to toilets, according to a recent United Nations report.

—Eric Pfanner, The New York Times

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PRESIDENT REIF: DIVEST MIT FROM FOSSIL FUELS

Dear President Reif,

We write you today as a growing coalition of undergraduate and graduate students, faculty, staff, and alumni of the Institute who are gravely concerned about the moral, physical, and financial health of the Institute in the face of catastrophic climate change.

Study after peer-reviewed study has confirmed the dire reality of anthropogenic climate change and the steadily narrowing window of time we have to stop it. In its 2012 World Energy Outlook, the historically conservative International Energy Agency stated that we have only five years to halt the construction of all new fossil fuel infrastructure if we are to avoid being “locked in” to more than 2°C of global warming.

In order to maintain an 80% chance of staying below this 2°C limit, we can afford to generate roughly 565 gigatons of carbon emissions through the burning of fossil fuels by 2050. A recent study from the Carbon Tracker Initiative found that the global fossil fuel industry already owns 2,795 gigatons of carbon in its proven reserves of coal, oil, and gas, each gigaton of which the industry is economically compelled to burn. These reserves represent more than \$20 trillion of assets that are already factored into the net worth of these companies. Allowing the fossil fuel industry to continue business as usual is the one most surefire strategy for ensuring complete climatic collapse.

President Reif, of what use will our degrees be in a world that is 4-6°C warmer than the one we inhabit today—a world that is outside the realm of human experience? Of what use is the continued development of MIT’s campus, considering that if global-warming-fueled Hurricane Sandy, representative of a new breed of increasingly frequent and powerful global-warming-fueled storms, had reached Boston, it very likely would have overtopped the Charles River Dam, putting our entire campus, from the Gray House to the MIT Nuclear Research Reactor, under many feet of water?

We want to be part of an MIT that leads the world in stopping this impending crisis before it is too late; an MIT that, in the future, is known to have recognized the existential threat of global warming and to have followed the guidance of its own scientists and engineers in meeting this crisis head-on; an MIT that is at the forefront of rational, bold, effective action on this critical problem facing our society. We are proud of MIT’s leadership in renewable energy research and campus sustainability initiatives, but the enormity of this threat and the scale of the response necessary to address it compel us to greater action.

We therefore ask you to take a specific, momentous step toward a better future for MIT and our world.

We call on MIT to immediately freeze any new investment in fossil fuel companies, and to divest its endowment within five years from direct ownership and from any commingled funds that include fossil fuel public equities and corporate bonds.

We believe that through this one action, the Institute would be choosing the path most in keeping with its mission statement and its commitment to “best serve the nation and the world in the 21st century” and to “work wisely, creatively, and effectively for the betterment of humankind” by setting an example for institutions across the globe to follow. We also believe this action to be in the best long-term financial interest of MIT. Our continued investment in the fossil fuel industry can lead to one of two futures: one in which global warming accelerates and the stability of human society is increasingly jeopardized; or one in which the rest of the world takes effective action to combat climate change, leaving those

2,230 gigatons of carbon in the ground and leaving MIT on the wrong side of history, holding onto the ashes and debt of an extinct industry. These are two futures we want no part of. It is unconscionable to finance our education in a way that leaves us no other options. If those 2,230 gigatons of carbon can be abandoned, unburned, we may yet escape the global catastrophe of runaway climate change. It is to work toward this essential result that we have chartered our group, Fossil Free MIT, and it is with this purpose that we will continue to educate and organize the MIT community around the goal of fossil fuel divestment, in the name of a better future for ourselves, for our children, and for MIT.

We hope you will lead us to that future.
Sincerely, Fossil Free MIT
fossilfree@mit.edu
tinyurl.com/FossilFreeMIT





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By Sam Shames
STAFF COLUMNIST

**Times like these bring
people together and
unite our communities.**

A four-panel comic strip featuring a runner. Panel 1: The runner is shown from the side, running towards the right. He is wearing a tank top with the word 'HUMANITY' on it and shorts. A speech bubble next to him says, 'I RUN IN HONOR OF BOSTON.' Panel 2: The runner is shown from the side, running towards the right. A speech bubble next to him says, 'BECAUSE EVEN THOUGH I OCCASIONALLY GET KNOCKED DOWN.' Panel 3: The runner is shown from the side, running towards the right. A speech bubble next to him says, 'I GET BACK UP AND KEEP RUNNING.' Panel 4: The runner is shown from the side, running towards the right. A large speech bubble above him says, 'UNTIL I FINISH THE RACE.' The runner is running on a path that leads into a dark, tunnel-like area. The comic is signed '© 2013 CREATORS.COM' and 'MARVIN SKINNEY' in the bottom right corner.

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Techdoku

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Instructions: Fill in the grid so that each column and row contains exactly one of each of the numbers 1–6. Follow the mathematical operations for each box.

SCIENTIFIC IMAGE

Changing the face of the nuclear engineer

MIT hosts over 600 nuclear science students and professionals for conference



JOHN STEMPIEN

Attendees of the 2013 American Nuclear Society Student Conference.

By Samuel Brinton

Students of nuclear science and technology learned from experts in the field, presented their unique research, and captured on video what it means to be a nuclear scientist or nuclear engineer last week at the 2013 American Nuclear Society Student Conference. The first ever "I'm a Nuke" videos will be featuring nuclear science and technology students from across the world who participated in the conference hosted by the Massachusetts Institute of Technology Student Section of the American Nuclear Society.

The conference theme was the Public Image of the Nuclear Engineer. This was based on the conflicting views of the nuclear industry which many continue to hold. Although nuclear energy is safe, clean, and reliable, it has many obstacles in convincing the public of its successes. Our Theme Director, Mark Reed, interviewed and filmed conference attendees to create the "I'm a Nuke" videos. We captured the many faces of nuclear professionals to show that they are a diverse group all working to

leverage the benefits society can realize from nuclear science. We plan to post the video on social media sites as well as share it throughout different media avenues in hopes of bringing a new generation of great ideas and great passion to the country.

Student presentations and posters highlighted the global nature of the nuclear science field.

The conference was led by three Co-Chairs: Nathan A. Gibson G, Ekaterina D. Paramonova '13, and myself, with many amazing volunteers from the Nuclear Science and Engineering Department helping to make one of the largest and most professional student conferences for students in nuclear science and engineering a success.

Planning began one year ago at the 2012 ANS Student Conference and brought many

interesting challenges and learning opportunities which don't always get taught in a classroom. For example, planning a boat cruise for 500 people is not taught at 9:30 a.m. in Neutron Interactions, but it may be just as difficult to track down the caterer to get food served as it is to track down a scattered neutron.

Commissioner George Apostolakis, Ph.D., of the U.S. Nuclear Regulatory Commission (NRC) served as the conference keynote speaker. "The theme for this year's ANS Student Conference will be an interesting topic to explore," stated Apostolakis in his remarks preceding the conference. "I plan to speak about my views on what shapes the public's image, to provide some insights about how the NRC tries to engender public confidence in our work, and to offer my thoughts on how to shape the public image of nuclear engineers in the future."

Students at the conference had access to the latest nuclear developments from industry, research, and academia. A team of nuclear engineers from Argonne National Laboratory presented a workshop

on Generation IV fast reactors. They presented the physics behind fast reactors, which can use up the hazardous waste created from commercial (water-cooled) reactors as fuel. "Fast reactors also extract about 100 times more energy from each pound of uranium and provide a large improvement in safety," commented Roger Blomquist, a Principle Nuclear Engineer at Argonne National Laboratory.

Students presented 171 podium presentations and 65 posters, which set new records for American Nuclear Society student conferences. These presentations also highlighted the global nature of the field with 88 registrants with international citizenship. Whether it was students studying law, nuclear medicine, quantum physics, computer science, or thermodynamics, the variety of backgrounds were united in bringing the conversations of nuclear science and engineering to new heights. With continued conversation, the nuclear science and engineering students at MIT and across the country will continue to improve the public image of the nuclear engineer.

THE SECRET LIFE OF RESEARCHERS

Chasing salt

Observing upper ocean turbulence

By Alec Bogdanoff

Gripping the desk as waves rock the ship back and forth, it is occasionally hard to sit upright at sea, let alone walk about the ship. I have strapped my chair to my desk with a bungee cord to keep me from sliding across the lab. A few minutes ago a large wave washed across the stern of the ship and sent salt water into the lab. Some of our equipment got wet, but nothing too bad.

As an observational physical oceanographer, going to sea is part of life — a part that I love tremendously.

The days are long and the work is challenging, but watching the sunrise across a clear blue sky with nothing in sight makes all of this worth it. As an observational physical oceanographer, going to sea is part of life, and a part that I love tremendously. Leaving port, working far away from land, and knowing that everything you need is on the ship with you provides a feeling of joy and sense of fulfillment surpassed by little else I do in life.

I am currently on the R/V Endeavor, operated by the University of Rhode Island, for the second of three U.S. cruises, which are part of the Salinity Processes in the Upper Ocean Regional Study, or SPURS. The first SPURS cruise was on the R/V Knorr, operated by the Woods Hole Oceanographic Institution (WHOI), and took place in September and October 2012. That cruise was 34 days long, starting in Woods Hole, MA and ending in the Azores. The second cruise is 31 days, starting and ending in Narragansett, RI. On both cruises we steamed nearly eight days to the salinity maximum of the North Atlantic to find the saltiest ocean water in the world.

The project, funded by the National Science Foundation and NASA, hopes to answer questions specifically about salinity in the upper ocean, in conjunction with the Aquarius-SAC/D satellite that infers sea surface salinity from space. The data we collect provides in situ salinity observations to compare with the satellite observations. In a world with a changing climate, precipitation patterns are expected to change, causing wetter areas to become more wet and drier areas to become more dry. Understanding upper ocean salinity processes will unlock secrets of how changing climate may impact the water cycle, both over the ocean, where the majority of it occurs, as

well as over land. Changes over the ocean will impact the entire cycle, including the water we drink on a daily basis.

Changes over the ocean will impact the entire cycle, including the water we drink on a daily basis.

Although my research does not directly look at the salinity process, it does focus on the physical processes that affect salinity in the upper ocean. As a physical oceanography student in the MIT-WHOI Joint Program for Oceanography, my research focuses on the stably stratified upper ocean. Just as oil floats on water, when the sun heats the upper ocean, a fairly thin stable layer floats atop the ocean. Depending on weather conditions such as low wind speeds and high incoming solar radiation, the upper ocean can warm and cool several degrees on a daily basis. At the surface of the ocean, heat and moisture are transferred between the atmosphere and ocean. Understanding the details of the physics in the upper ocean is fundamental to understanding how the sea and air interact.

In order to observe the upper ocean at very small scales, on the order of centimeters to meters, we are using special instruments that make measurements over 500 times each second. One type, called a Vertical Microstructure Profiler (VMP), is tethered with a wire and released over the stern of the ship. The VMP allows us to record a time series of measurements in one place by continuously releasing the instrument and bringing it back to the surface. The second type we use is a small package attached to autonomous Slocum gliders. The gliders use buoyancy to maneuver around the ocean for up to a few weeks at a time. This data is used to tell us how the ocean mixes, and more specifically what processes cause the mixing.

Although being at sea can be quite a bit of work, it is nice to take time to reflect on the beauty of nature when time allows. My favorite days at sea are when the wind is calm enough to create seas so flat that the clouds reflect in the ocean. Although I must admit, it is not just because it creates a beautiful sight, but also because on those days the ocean warms the most, creating a stable boundary layer.

Alec Bogdanoff G is a physical oceanography graduate student in the Department of Earth, Atmospheric, and Planetary Sciences.



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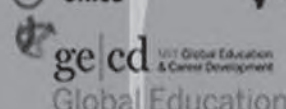
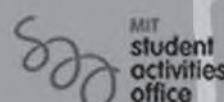


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Explosions spell tragedy on Marathon Monday

Two possible suspects identified; pressure cooker bombs leave three dead, many injured



COURTESY OF BOSTON.COM

On Thursday, the FBI released images of two suspects involved in the Boston Marathon bombings that occurred on Monday. Two bombs exploded near the finish line of the Boston Marathon, killing three people and injuring over a hundred people.

Marathon, from Page 1

ing, “GET AWAY FROM THE VAN. EVERYONE PLEASE MOVE AND AWAY FROM THE VAN.”

“All I remember was running for dear life in the opposite direction and screaming at everyone to get away,” Lo said. It took the two an hour to get home, but they made it safely.

The bombs

In the pictures released by the

FBI yesterday evening, Suspect No. 1 wears a dark hat, and Suspect No. 2 a white hat. FBI have identified Suspect No. 2 planting a bomb within minutes of it going off, said Special Agent Richard DesLauriers, who is in charge of the Boston FBI office. Afterwards, Suspect No. 2 went west on Boylston, while it is unclear where suspect No. 1 went. A video is available on the *Boston Globe*, and the authorities plan to release more images soon.

The bomb sites were closed to the public in the days following the explosion. As of Thursday night, a 10-block area in Back Bay remained closed. Boylston is still closed, as are side streets between Newbury Street and Huntington Avenue.

Contrary to reports on Wednesday afternoon, no suspect has been arrested for the marathon bombings. Spectators and journalists who gathered at the Moakley courthouse on Wednesday to wait for a possible arraignment of a suspect in the bombing were evacuated after a bomb threat on the building. Federal officials confirmed no arrest had been made.

According to police reports, the suspects were carrying large, black nylon backpacks with the explosives inside. The FBI believes the explosives were pressure cookers stuffed with explosives, ball bearings, and nails.

President Obama visited Boston yesterday afternoon to attend the memorial service for the victims at the Cathedral of the Holy Cross. He spent the day at Massachusetts General Hospital visiting families. Michelle Obama is expected to make the same rounds as well.

The president signed an emergency declaration for Massachusetts on Wednesday afternoon so that federal aid could assist with local response.

In a statement on Monday, Obama swore that “Any responsible

individuals, any responsible groups will feel the full weight of justice.”

Casualties

The three dead include eight-year-old Martin Richard of Boston, Krystle Campbell, 29, of Arlington, and Lingzi Lu, a Boston University graduate student. *The Boston Globe* reported that 14 people have lost their limbs, and many others have severe injuries. As of Wednesday night, 62 people remained in the hospital, and 12 were in critical condition.

Authorities are urging citizens who know anything about the suspects to assist in the investigation. The FBI can be reached by 1-800-CALL-FBI or by email at boston@ic.fbi.gov.

On Facebook, the Boston Police Department posted, “No tip is too small or insignificant. Help us locate and identify these individuals. Any and all information is encouraged and appreciated.” People are encouraged to submit photos, videos, and other information to the FBI.

“The person who did this is someone’s friend, neighbor, co-worker, or relative,” said DesLauriers in a press conference Tuesday afternoon. “Cooperation from the community will play a crucial role in this investigation.”

DesLauriers also emphasized that investigators were looking to speak with anyone who was in

front of the Forum restaurant on Monday afternoon, the site of one of the explosions.

Effect on students

Several students from local universities were injured on Monday, reported the *Boston Globe*. There were three from Tufts University, seven from Emerson College, three from Northeastern University, two from Berklee College of Music, and one from Boston University.

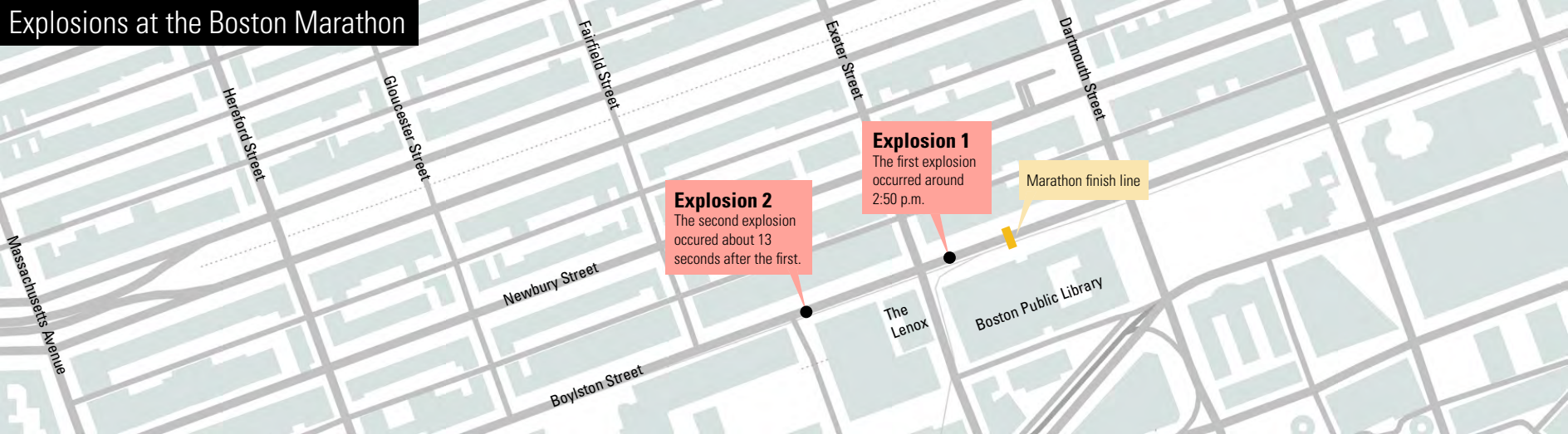
While no MIT students, faculty, or staff were physically hurt in the blast, the explosions had deep repercussions in the community. See *The Tech’s* story on page 12 for details of MIT’s response.

In an email to all of MIT on Monday evening, President L. Rafael Reif reminded the community that “times like these require that we stay together and take care of each other.”

According the Boston Marathon’s website, the marathon is the oldest annual marathon in the world. Supporters are already rallying for next year, and more people are hoping to enter the race. During his speech yesterday, Obama bet that next year’s marathon would be even larger.“We’ve had 116 years of incident-free marathon,” reminded Thomas Menino, Boston’s mayor, on Tuesday. “This is a painful and tragic lesson... but next year’s marathon will be bigger and better.”

Joanna Kao contributed reporting to this article.

Explosions at the Boston Marathon



INFOGRAPHIC BY JOANNA KAO—THE TECH

MIT runners write about their marathon experiences

Masashi Hirose G

(2nd year in Boston Marathon)

Training and the race: I started to train for the marathon when I came to Boston in 2009. I was a member of the track and field club and ran mainly 1500m in junior high school and high school in Japan. I regularly join races such as 5k, 10K, half marathon and team relay with friends. The daily training is to run 5-8 miles along Charles River or Fresh Pond about four times a week.

On the explosion: Except this disastrous event, the conditions of the Boston marathon this year, such as weather, temperature and well-organized logistics, were perfect. I am really sorry that this tragic event jeopardized all the efforts and hopes of runners and supporters. This tragedy happened just a few meters before the goal, which is the crowning moment for runners to pass. It must be really hard for runners who feel almost relieved from the pain accumulating over 26.2 miles to respond to this abrupt event rationally.

Megan Ellis Bonney G

(1st year in Boston Marathon)

Training and the race: I started training specifically for this race in January though I run year round. I had a wonderful experience at the marathon today. I got to be in community with so many other talented runners, feel the power of the Wellesley scream tunnel, and test myself on the Newton Hills. I man-

aged to run a minute faster than my previous best time, which I was happy with as well. Overall, the race was challenging but inspiring and fun... everything I hoped Boston would be.

On the explosion: When the blast went off I had started walking with my parents and brother on Boston Common. We heard the two loud blasts. My mother was quite concerned. I also thought it was odd, but chalked it up to some sort of Patriots Day celebration. We then went to the T at Park Street and headed back to Kendall. When we arrived in Kendall and got a call that it was a bomb, I was extremely upset — I still had teammates and friends at the race. The whole experience still feels surreal. I can’t believe that a place that is such a symbol of triumph became so terrible.

Felix Moser G

(3rd year in Boston Marathon)

Training and the race: I usually train 3 months leading up to a race. Today’s race was my personal best. I ran 2:34:18, almost 10 minutes off my previous personal record, good enough for 128th overall. It’s been a long-time goal of mine to break 2:40, and to do that at Boston was amazing. A lot of friends from MIT came out and cheered for me, too, which also meant a lot to me. The Boston Marathon is my favorite race. The logistics are handled with sublime professionalism, the crowd support

is unparalleled, the volunteers are amazing, and heck, it’s Boston!

On the explosion: I passed through the finish line at around 12:35, so well before the explosions. I was home at Sidney-Pacific when it happened. One of my labmates called me to ask if I was alright; that’s how I found out. My immediate thoughts were of the friendly faces of the volunteers at the finish line and how I hoped nobody was hurt. I’ve been following the events throughout the day online. The pictures and videos are horrific. I recognize so many details of that scene. The finish line. The dense, cheering crowd. The gold-jacketed volunteers. The Marathon Sports storefront (I usually buy my shoes from there). The line of flags they routed us by. I probably passed within a few meters of that first bomb. It seems mostly spectators were hurt. I think of my friends cheering in the crowd and shudder at the thought that they could have been there. I spent most of the day angry, wishing I could do more than read news sites. This was very personal. Runners are a big family, and this happened to all of us. We’re all hurting today. But especially, my heart goes out to the victims and their families. I read that one of the dead is an 8 year-old child.

I was also impressed by the outpouring of support from the community in helping the stranded runners, who were unable to retrieve their belongings, catch their

flights, return to their hotels, etc. Within hours, a website had gone up containing information of thousands who had volunteered to host stranded runners. And that’s only a vignette of the support the community rallied.

Ranbel Sun

(1st year in Boston Marathon)

Training and the race: This was my first Boston Marathon, and despite having bricks for legs during the last couple of miles, I was grinning like a madcat during the run. I only started running less than 3 years ago when I decided to check off a bucket list item and do a marathon. After that experience, the thought of qualifying for Boston (“running a BQ”) latched onto my mind. To qualify, you have to run a sanctioned marathon in a required time based on age and gender. The BQ training process was more mentally grueling than any exam, and crossing the finish line in the required time was comparable to receiving the MIT admissions tube. Thus, to me, the Boston Marathon was much more than a 26.2-mile run: it was the reward for months of sweat and discipline. My training for Boston was less intense — I started prepping in January and ran an average of 30 miles per week. My goal on Monday was to have fun, and the energy of the crowds went above and beyond my expectations.

On the explosion: I crossed

the finish line around 2 p.m. and hobbled over to a grassy area a few blocks away to take a break. I heard what sounded like a blast of cannon fire and dismissed it as a traditional celebratory salute. A few minutes later, I started getting texts asking “I heard about the marathon. Are you okay?” It seemed a bit strange that people were concerned for my well-being rather than giving the typical congratulatory messages. I did not have internet access and my phone reception was terrible, so I didn’t know what was going on. Then I heard people around me talking about a possible gas explosion. It seemed so random that I shrugged it off as a minor incident. I did not hear the supposed second explosion. Eventually, through my post-marathon exhausted haze, I connected the explosions to the “Are you okay” messages and started getting a sense that something more serious had happened. The malicious and devastating nature of the event only really hit me when a shocked pedestrian stopped me on the street rambling about bombs, casualties, and limbs being blown off.

Now, I don’t feel like someone who ran Boston but rather someone who survived a terror attack. It seems unfair to the victims to bask in the glow of my dream marathon. However, it was certainly an experience I’ll never forget, and it has not affected my desire to participate in future events.



HO YIN AU—THE TECH
The Green Building at MIT was lit with the pattern of the American flag on the night of April 15, 2013.



MENG HENG TOUCH—THE TECH
Students tied well-wished messages to flowers set up by the organizers of the commemoration event held on Kresge lawn Wednesday afternoon.

After Marathon tragedy, outpour of support from MIT

Community raises over \$110,000 for recovery, gathers for memorial to honor first responders

by Joanna Kao
CONTRIBUTING EDITOR

Monday's marathon bombings took a heavy emotional toll on MIT. While no students or faculty at MIT were physically injured at by the attack, the stories that have since emerged show that the bombings have still deeply hurt many in the MIT community. But through the tragedy, we've seen the Institute's strength through stories of inspiration, hope, and community.

In less than 90 minutes, they raised nearly \$12,000. As of press time today, they have raised over \$47,500 for Martin Richard, the 8-year-old killed by the explosion on Monday.

Many from MIT were friends, sons, or neighbors of the victims of the explosion that killed three people and injured over 170. Others rushed to the scene in the face of danger or opened up their homes to strangers in need. Since Monday, the community has pulled together to support victims in significant, meaningful, and varied ways.

"Anything we can do to make your life easier?"

In the past two days, the community has gathered to support two of its own — Richard T. Whalley, whose parents are both in the ICU, and Chris Peterson G, a close friend of Martin Richard, the 8-year-old who was killed by the explosion on Monday.

Peterson found immediate support from his classmates, colleagues, and administrators. "I was immediately contacted by someone from the Office of the Dean of Graduate Education and by faculty members and administrators, who were basically like, what do you need, do you need anything, is there anything we can do to make your life easier. And that's been really wonderful," Peterson said. "The administrative support thus far has been really terrific. And the community support from my classmates and colleagues has been terrific. And made what would be otherwise a hard time somewhat easier."

When Peterson's friends and colleagues at the Center for Civic Media found out about the death and Peterson's relationship with it, they helped

Peterson create a website so that people who wanted to help the Richards family could have a way to donate money to the family.

"The Richards had not asked for help, but a lot of people had asked how they could help the Richards," Peterson said. "There's nothing that people can do or give that will bring Martin back, but there are things that people can do or help the rest of the family make sure that they don't have other things to worry about, that they can help smooth

what is going to be a long, hard road for the family."

Peterson sent an email to a circle of friends shortly before 11 a.m. yesterday, and in less than 90 minutes, they raised nearly \$12,000. As of press time today, they have raised over \$47,500.

"It's more important that you give than to whom you give. But if you were struck by [Richard's] story, if you want to help, you can go and donate. And the most important thing is that you remember what Martin wrote on that poster that everyone's seen, which is just to stop hurting people. Because that would be the best way to remember him," Peterson said.

"Really, really incredible to see strangers who don't necessarily know the Whalley family directly but feel the need to be helping out."

Richard T. Whalley '10 was at work in Cambridge when the explosion went off. He tried to reach his parents who had gone to watch the marathon, but he wasn't able to get a hold of them. Later, his brother showed him a photo on Reddit — he had found their dad. Their father was covered in blood and in a wheelchair.

Whalley started calling area hospitals to find his parents. But because of registration errors, he wasn't able to find them right away. After posting about his situation on Facebook, ten friends helped call hospitals to track his parents down. Both of Whalley's parents suffered serious injuries and are now in the ICU.

Whalley's friends, co-worker James E. White '10 and Media Lab research assistant Praveen Subramani '10, wanted to help Whalley and his family in a more long-term way. They launched a GiveForward campaign Wednesday morning, and by press time today, they raised over \$64,000 from over 1300 donors.

"It's amazing, and to be honest, I didn't expect it to pull together quite like it has. I was very lucky to be not only part of the MIT community, but this group called the Startup Leadership Program," Whalley said. "They acted and organized this on a short time scale and promoted it via Facebook and the Internet and other media."

Even though it was obvious that Whalley was hurting, one of the first things he said was that he wanted to encourage MIT students to help other victims and their families. White said that he and Subramani are working to find a way to channel extra money to others in need and that anything left over will be given to funds for other victims.

About 400 people gathered on Kresge Oval to reflect on the Boston Marathon and sign posters for the first responders and hospitals in the area on Wednesday evening.

"The pace with which [the campaign] has exploded has been incredible. A huge part of that has been due to the fact that we had dozens and dozens of people asking us how they can help and how they can help share the word through their networks," Subramani said. "Given the fact that we had the MIT community behind us and Rich's Startup Leadership Program, they all helped us get the word out."

People, both at MIT and elsewhere, have offered the Whalley brothers apartments to stay in, cars to borrow, and food. The Harvard School of Public Health gave Whalley and his brother an apartment to stay in while their parents are in the hospital.

"It's been a huge amount of support that the family is receiving from the community at large which has been really fantastic," Subramani said. "We'd love to just say thank you to everyone from MIT who has helped and all the larger community members. I've been

reading all the messages and a huge number have been from MIT, people from the incoming class of 2017 and it's really, really incredible to see strangers who don't necessarily know the Whalley family directly but feel the need to be helping out."

"The kind of man and American I am is that I want to help when there is danger or a crisis like this."

Bruce Mendelsohn was at a party on the 3rd floor of 667 Boylston Street to celebrate his brother's marathon run. For a hundredth of a second after the first bomb went off, Mendelsohn thought it was a tribute to someone finishing the marathon. But he quickly realized that it was a bomb or some sort of explosion that wasn't planned.

After making sure everyone in the room got away from the window, Mendelsohn raced down three flights of stairs and ran out the door. Mendelsohn, Director of Communications for the Gordon-MIT Engineering Leadership Program (GEL), was in the military from 1990 to 1993,

and his training kicked in almost immediately.

"I thought of the guys I worked with in law enforcement when I was in Washington DC. I thought of the students at MIT and the leadership program that I work in, and I kind of thought, well, what would they expect me to do? What would they do if they were in a similar circumstance? They would rush towards, not away," Mendelsohn said. "I thought that the kind of man and American I am is that I want to help when there is danger or a crisis like this. And I think that's really what separates us from these people, whoever they were — I have no idea, and quite frankly, I don't care, but these people, whoever they are, they want to destroy our way of life. And when we have citizens who rush in and imperil their lives, then that personifies Americans."

Mendelsohn helped tie a tourniquet on a young woman, reunited

a mother and her young son, and helped people into wheelchairs. He helped alongside other first responders until an officer asked him to leave.

"Now that it's all sinking in, I'm proud of what I did, but I wish I could have done more," Mendelsohn said.

"I know MIT will be a stronger place because we'll come together as a community to support each other."

The sun shined brightest this week on Wednesday. About 400 people gathered on Kresge Oval to reflect on the Boston Marathon and sign posters for first responders and hospitals in the area. Chancellor Eric Grimson and Chaplain Robert Randolph's speeches were short, but their message was clear — they encouraged students to "move from this tragedy to making this world over." Grimson encouraged students to start training for next year's marathon. "If you want, you can start training now for next year's Boston Marathon so that MIT has a huge contingent of runners of all shapes and sizes — some of us need it more than others. But we get out there to show that this will not change a wonderful event."

Prior to and following the speeches, hundreds of students and faculty lined up to sign table after table of posters with thanks and encouragement for first responders and hospitals in the area. "Thank you." "Peace + Love to you." "Be safe, be well, be strong."

VIDEO: MIT COMMUNITY GATHERS IN KRESGE OVAL AFTER BOSTON MARATHON BOMBINGS.



HO YIN AU—THE TECH
"Playing the bagpipes helps me get over bad times," John Graham '16 said after he played "Amazing Grace" on the banks of the Charles River, in tribute to the victims of the Boston Marathon attacks earlier that same day. Two bombs exploded at the finish line of the Boston Marathon, killing three people and injuring over a hundred people.



MELISSA RENEE SCHUMACHER—THE TECH
Following a "reflection" held on Kresge Lawn Wednesday afternoon, members of the MIT community sign cards for hospitals and first responders to the Boston Marathon tragedy. The reflection, hosted by Students at MIT Allied for Student Health (SMASH), featured speeches by Chancellor Eric Grimson PhD '80 and Institute Chaplain Robert Randolph.



ETHAN A. SOLOMON—THE TECH
Boylston St. remained blocked off Wednesday evening after Monday's bombings. Blue and yellow flowers, representing the colors of the Boston Marathon, were tucked into the barricade near a makeshift memorial.

Remember "Don't Worry Be Happy"?

MIT's nomadic sculpture

List Visual Arts Center preparatory John Buck installs the sculpture looking over the Media Lab atrium.

What’s next for east campus and Kendall Square

At the faculty meeting on Wednesday, Provost Chris A. Kaiser PhD '87 announced the appointment of a new group of administrators, faculty, staff, and graduate students to make specific plans for MIT's east campus. In the next two or three months, the group will work on a “strategic vision” for a new gateway at the Kendall T stop that is hoped to be as iconic as MIT’s entrance at 77 Mass. Ave. The group is also tasked with finding ways to improve Kendall Square as an “innovation cluster” and draw more retail and foot traffic to the area.

In the seven to nine months after that, according to Kaiser, the exact implementation will be worked out by professional consultants.

Kaiser’s announcement comes after the Cambridge City Council’s vote in favor of MIT’s Kendall rezoning proposal, a formal endorsement of MIT’s intentions to bring denser mixed-use development to the area.

Leading up to that vote, vocal members of the MIT community criticized the lack of faculty input in the proposal, despite assurances from administrators that the rezoning proposal would leave enough room to address issues important to the MIT community, such as the need for graduate student housing.

But a majority of the members of the new study group are MIT faculty in the Department of Architecture and Planning or the Department of Urban Studies and Planning, a fact that anthropology professor Susan S. Silbey called “gratifying.” The group is divided into two sub-groups: a steering group chaired jointly by Kaiser and Executive Vice President and Treasurer Israel Ruiz SM '01, and a design group chaired by School of Architecture Dean Adèle N. Santos.

The study group will also take into account the findings of the graduate student housing working group chaired by former DUSP head Phillip L. Clay PhD '75.

“Quite honestly, I could not tell you whether we need more graduate student housing or not, looking at the data we have now,” Kaiser said at the faculty meeting. But he hopes that Clay’s group will shed light on the matter in their report, which is scheduled to be released this summer.

—Leon Lin

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Jack, Course 19

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To view internship opportunities and learn more about this program, please register at the website:

<https://isn.mit.edu/internship/index.php>

If you have questions about this program, or experience difficulty using the website, please contact Marlisha McDaniels, at the ISN: mmcd@mit.edu, 617.324.4700.

*The Army Lab provides the intern's salary, which typically ranges from \$2280/month to \$2864/month depending on class year. Under certain circumstances the ISN can provide the intern with a supplement of up to \$1500 to defray costs of local accommodations and travel.

The mission of the MIT Institute for Soldier Nanotechnologies is to dramatically improve the protection and survivability of the Soldier and first responder through basic research and collaboration with the Army and industry.

Coop Student Board of Directors

Election Update

The following student Coop members are candidates for the Board of Directors for the 2013-2014 academic year.

VOTE NOW!

www.thecoop.com

MIT Undergraduate Students:

Paige Finkelstein, 2014

Emma Kane, 2015

Josh Dunaway, 2014

Eric Ruleman, 2016

MIT Graduate Students:

Samuel Shaner, PhD, 2015

Harvard Undergraduate Students:

Joshua Zhang, 2014

Cody Dean, 2014

Madeleine Smith, 2016

Daniel Kramer, 2015

Monika Lutz, 2015

Harvard Graduate Students:

Oliver Hauser, PhD, 2015

Patrick Rich, PhD, 2015

Sneh Patel, MBA, 2014

Voting Deadline is April 25

THE COOP

M. I. T.



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April 23-26

TUE

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WED

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THU

Neon Day


Travel back in time: Brightest wins

FRI

MIT Day

Show your spirit with MIT colors and apparel and find Tim for prizes

Stop by **Lobby 10** from 10-4 each day showcasing your spirit to win prizes.



Solution to Crossword

from page 5

CLAD	CPAS	AGREE
HYP	HOPE	PREYS
ESPN	ALOE	POPES
SOLE	PROPRIETOR	
SLYDOG	SWAT	
	ELECT	IRONED
SAJAK	RIPS	EAU
ISOLATED	SHOWERS	
TIL	AWES	MIDST
ESTEEM	STAIN	
	AXES	STEREO
DESERTED	DISLAND	
RULER	ARID	INDO
ADMIT	FIVE	STIR
PEONS	FEES	TOTS

Solution to Sudoku

from page 6

1	3	7	8	2	4	9	6	5
6	8	2	1	5	9	7	4	3
4	5	9	3	7	6	1	2	8
7	2	6	5	9	8	4	3	1
3	1	8	4	6	7	2	5	9
9	4	5	2	1	3	6	8	7
8	7	4	6	3	1	5	9	2
2	9	3	7	4	5	8	1	6
5	6	1	9	8	2	3	7	4

Solution to Techdoku

from page 6

1	5	2	6	3	4
5	3	6	4	1	2
4	2	5	3	6	1
6	4	1	5	2	3
2	6	3	1	4	5
3	1	4	2	5	6

New officers to rebrand GSC

Will harness student energy, take ‘bottom-up’ approach

By Bruno B.F. Faviero
NEWS EDITOR

MIT’s graduate students will see new representation this coming year in the Graduate Student Council’s (GSC) officers-elect, who will take office in May: President Caleb Waugh, Vice President Alex Guo, Treasurer Parth Trivedi, and Secretary Chris Smith.

The quartet described itself as a group of GSC “outsiders.” Except for Guo and Trivedi, none of the officers knew each other, and none of them had previously been a GSC officer, though Guo had been on an executive committee. The group is currently in a month-long transition period with the outgoing GSC. “There’s an enormous amount of programming that we have to transition,” said Waugh about the GSC’s events, which include the entirety of graduate orientation, “and there’s a lot of understanding about the relationships and the channels that we have for communicating graduate student needs to the administration that we need to pass on.”

Waugh said that the group has outlined three major goals for the next year — rebranding the GSC and increasing its publicity efforts, tapping into the ideas and energy of students, and influencing developments in Kendall Square.

Rebranding

In representing all 6,700 of MIT’s graduate students for the next year, one of the GSC-elects’ goals is to turn to the student body for ideas.

“We feel strongly that the most valuable asset that MIT has is innovative, entrepreneurial students that are excited to do new and dif-

ferent things,” said Waugh, “the solutions we need are at the bottom with students that want to do things.”

Waugh hopes that students will be entrepreneurial in the sense of coming up with ideas for events and activities that the GSC can support with resources like the funding board. Last year, the funding board allocated over \$130,000 to activities and student groups. “It’s important to have a bottom-up approach,” said Guo. “... Not a top-down, bureaucratic, solutions-come-from-the-top approach,” added Waugh.

The challenges they see include reaching all the students, given that they are dispersed across different departments and living areas. Nevertheless, the executive officers hope to create communication channels to make students comfortable with coming to the GSC with ideas. Smith said the GSC hopes to maximize publicity and engage students on fronts like social and print media. The GSC has a Facebook group, but it currently has only 476 likes, and its last tweet was on Feb. 6 of this year.

“[Publicity] is a constant challenge for the GSC, and we want to make sure that we’re working on it,” said Smith. “It’s both high-tech and smart deployment of low-tech, more personal methods.” Smith added, “It could be something as simple as holding events off-campus that make it easier for off-campus [students] to attend.”

The executive officers also recently met with the co-presidents of the Sloan senate, the representational body for Sloan graduate students, in an attempt to establish closer relations.

“We’re trying to have all five [Sloan] spots filled so we can know what they care about and how we can help them,” said Guo, referencing Sloan’s five spots on the GSC general council, which contains representatives from every department and dorm, and off-campus representatives.

“We’ve got big shoes to fill”

Waugh said that in terms of impact, last year’s GSC was incredibly successful. Headed by Brian Spatocco G, the GSC piloted a new childcare program and began to collaborate more with the Undergraduate Association (UA), releasing a joint vision last May. Waugh said that this GSC hopes to continue working on those issues, having recently met with Sidhanth P. Rao ’14 and Devin T. Cornish ’14 — the UA President- and Vice President-elect — to discuss how the UA and GSC might work together in the coming year. Waugh mentioned that the collaboration might include the formation of a grad/undergrad mentorship program of some sort.

However, said Waugh, “If there was one thing we would want to be involved with in the next year and be able to influence, [Kendall Square] would probably be one.” Waugh said that last year’s GSC was very involved in the Kendall development and with the City of Cambridge, and that a lot of the work in the coming year will be understanding how the Kendall and MIT 2030 redevelopment programs will affect graduate students.

Overall, though, “no revolutions,” said Waugh about their plans. “[We’ll be] focusing on entrepreneurial students, helping people do what they want to do.”



CHRISTOPHER A. MAYNOR—THE TECH

Vice President-elect Alex Guo is a third-year PhD student in EECS, and received her B.S. from UC Berkeley. “I think it’s a responsibility for us to have built a brand and engage more students so they know what we do and help us do it better.”



CHRISTOPHER A. MAYNOR—THE TECH

Secretary-elect Chris Smith is a first-year PhD student in the Department of Urban Studies and Planning, and received his SB from MIT. “What leads me to be involved is just a basic impulse to serve.”



CHRISTOPHER A. MAYNOR—THE TECH

President-elect Caleb Waugh is a fifth-year MsC student in Nuclear Science and Engineering. “The institute is so responsive to our input and needs. The GSC can make enormous impact, and it can be used for a lot of good on behalf of students.”



CHRISTOPHER A. MAYNOR—THE TECH

Treasurer-elect Parth Trivedi is a first-year S.M. candidate in Aero/Astro and received a B.S. from Purdue. “I think serving the community is a fundamental responsibility and I have always tried to maintain that wherever I go.”

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Saturday, May 4th: Training Workshop
Sunday, May 5th: Hackathon
Full-day sessions (10 a.m. - 6 p.m.)

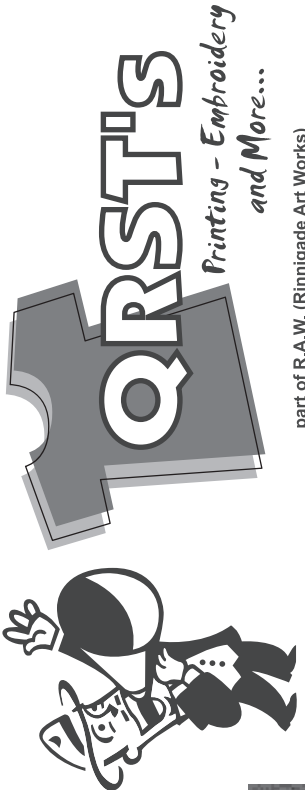
Join us on Saturday, May 4th for more training plus some time to get a headstart on your project at hack/reduce. The official hackathon will be held on Sunday, May 5th and we can’t wait to see what you come up with – the demo party will begin at 4 p.m.! And yeah, the hackathon overlaps with Cinco de Mayo – so of course we’ll be serving beer, margaritas and great food to celebrate the day.

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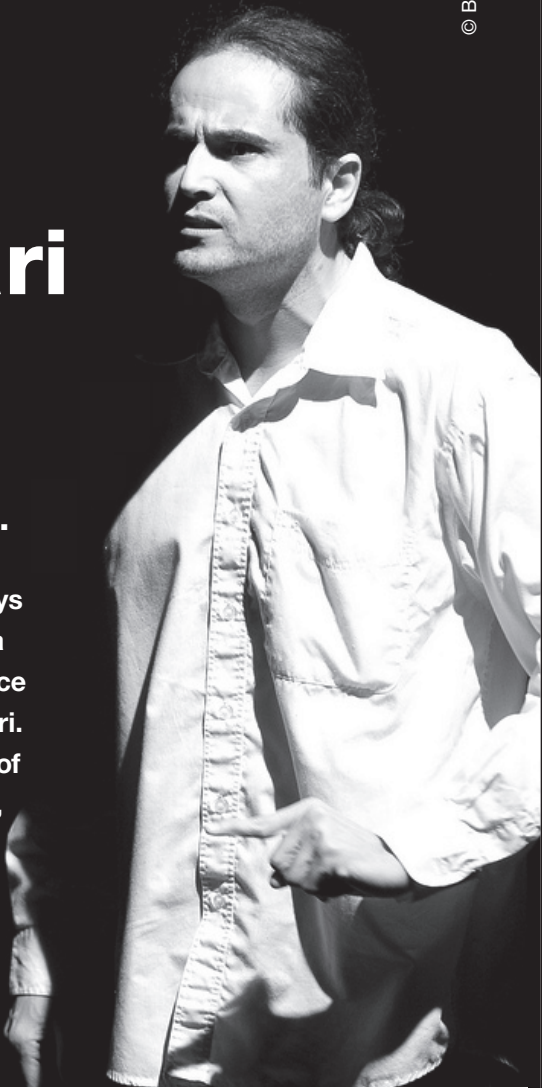
In Between

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A One Man Show by Ibrahim Miari

Bartos Theater—E15-070
Wed. 4/24/13, 7:30–9:00pm
Doors open at 7:00
Dessert to follow. All are welcome.

Semi-autobiographical, *In Between* portrays the complexities and contradictions of a Palestinian-Israeli identity. On the precipice between two cultures stands Ibrahim Miari. He recalls his childhood in Acco, memories of his Jewish and Palestinian grandmothers, of war, and of the struggle to shape and understand his own multi-faceted identity as he is interrogated by Israeli police and contemplates marriage to a Jewish American woman.



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Technology and Culture Forum

Biology department creates 6-7 MEng with EECS, new GIR classes

At the April faculty meeting on Wednesday afternoon, members of the faculty voted unanimously to introduce two new expansions to MIT's biology program.

The first motion created a new Master of Engineering (MEng) Degree in Computer Science and Molecular Biology (Course 6-7). Professor Freeman said that by allowing 6-7 students continue their studies at a graduate level, the new degree would open up both professional and academic opportunities for those pursuing a career in the burgeoning intersection of the two disciplines.

MIT currently offers MEng degrees in Biomedical Engineering, Civil and Environmental Engineering, Electrical Engineering and Computer Science (EECS), Logistics (from the Engineering Systems Division), and Manufacturing (from the Department of Mechanical Engineering). The MEng program in EECS is by far the most popular, with over half of the graduating class of EECS seniors every year entering the program and successfully completing it, according to the EECS website.

The second motion adds the new classes 7.015 and 7.016 as options for satisfying the biology GIR requirement in the Fall in addition to the current 7.012 course. 7.015 is meant to be the

biology department's version of 5.112 (Introductory Chemistry) and 8.012 (Physics I) — a more advanced introductory course for students with strong biology backgrounds in high school. 7.016 will focus on biochemistry alongside the basics of the biology curriculum. The other two flavors of Introductory Biology, 7.013 and 7.014, will still be offered only in the Spring.

All five Introductory Biology classes (7.012, 7.013, 7.014, 7.015, and 7.016) share a core biology curriculum that makes up about half of each course's syllabus. The other half in each course is class-specific. MIT's subject listing currently describes 7.012 as focusing more on genetic approaches to biology, 7.013 as focusing on neurobiology and development, and 7.014 as focusing on ecology and biogeochemical cycles.

Part of the reason 7.015 and 7.016 are being introduced is to alleviate the pressure on the popular 7.012 class, which had 835 students in the fall of 2012. For reference, at the end of Spring 2012, there were 322 students in 7.013 and 132 students in 7.014, according to the reported number of students eligible to respond to the online subject evaluations for each course.

Leon Lin contributed reporting.

—Stan Gill



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Triathlon competes at Nationals

MIT's club team sent four to Arizona last weekend

By Sam Nicaise
and Sarah Weir
TEAM REPRESENTATIVES

On Saturday, April 13, four MIT triathlon club athletes competed in the USAT Collegiate National Championship in Tempe, Arizona. The event was like none other — there were over 1000 athletes from 108 schools from around the country who were excited, nervous, and exhilarated all at the same time. For the MIT club, most races occur during the summer and fall against other northeast collegiate teams, so an early-season April race was a great way to kick off the local season.

On Thursday, when it was 37 degrees and raining in Boston, Tempe reached 90 degrees and the sun never stopped shining. The weather stayed constant for Saturday, when the team had their competition. This was an Olympic distance race,

which means it consisted of a 1.5 kilometer swim followed by a 40 kilometer bike and a 10 kilometer run. The swim was a rectangular course in Tempe Town Lake, the questionably clean watershed in downtown Tempe, and the run was a bridge loop around the same lake.

At 5:30 a.m. on Saturday morning, the transition area opened up, meaning athletes could set up their cycling and running shoes, socks, in-race fuel, and anything else they needed to switch from the swim to the bike and the bike to the run. After a quick warm-up in the lake, the first men's wave, which included Mitchell David Hsing G and Sam Nicaise G, started at 7:30 a.m. Ten minutes later, Akansh N. Murthy '13 started as part of the men's second wave. It wasn't too hot yet when the men started, but the 67 degree water still felt refreshing. Hsing was first

out of the water for MIT, and had a quick transition before the bike leg. The bike course consisted of two identical laps around the lake and surrounding areas. It was a fast course, with gradual hills and lots of corners.

The running course was similar to a Charles bridge loop, but without any shade. The MIT men all braced the heat and injuries to finish the race intact and in good standing. Hsing led MIT with a time of 2:13.29, Nicaise was close behind in 2:14.06, and Murthy finished in 2:35.14.

The women's race didn't begin until 11 a.m. and included Sarah A. Weir '14, a *Tech* sports editor, who started in the second women's wave, and finished in 2:43.24.

Not surprisingly, teams from Colorado and California dominated the team titles. The fastest man, from hometown Arizona State University, finished in



DAVID M. LEARNED

Four athletes from the MIT triathlon team competed last weekend at the Collegiate National Championship in Tempe, Arizona. From left to right, the teammates are Mitchell David Hsing G, Sarah A. Weir '14 (a *Tech* sports editor), Sam Nicaise G, and Akansh N. Murthy '13.

1:46:36. The fastest woman, from Colorado, finished in 2:01:13.

Although it was hot and not everyone from MIT wore enough sunscreen, no one can deny how amazing the race was. The energy from having so many schools all in one place, cheering for each other, excited about triathlons probably won't be replicated until the next Collegiate Nationals, which will occur next April, again in Tempe. This was the first Collegiate Nationals

competition for Hsing, Murthy, and Weir, while Nicaise returned as a third-time competitor.

The next race for the MIT triathlon team is the New England Season Opener on May 12. Unlike Tempe, the temperature will be about 30 degrees lower, and the water promises to be barely warm enough to swim in.

Keep your eyes on triathlon.mit.edu for updates throughout the summer season.

UPCOMING HOME EVENTS

Friday, April 19

Baseball vs. Wheaton College 3:30 p.m., Briggs Field
Women's tennis vs. Middlebury College 5 p.m., DuPont Tennis Courts

Saturday, April 20

Track and field vs. MIT Spring Invitational 12 p.m., Steinbrenner Stadium
Women's openweight crew vs. UMass, Wellesley TBD, Charles River
Women's lightweight crew vs. Stanford, Boston University TBD, Charles River
Sailing vs. Tech Invitational 10 a.m., Charles River
Sailing vs. Priddy Trophy 10:15 a.m., Charles River
Softball vs. WPI 12 p.m., Briggs Field

SPORTS SHORT

Men's track and field wins home meet

At its second home meet in the past two weeks, the MIT men's outdoor track and field team finished in first place with 246.5 points. Bates College was close behind in second place with 229, the University of Southern Maine was third with 115.5 and Colby College was fourth with 85 points.

Tyler S. Singer-Clark '14 kicked the meet off with first place finishes in the 100 meter with a time of 11.06 and the 200 meter in 21.93. States Lee '16 came second in the 200 meter in 22.25.



MIT dominated the 400 meter race, taking six of the top eight spots. Derek C. Barnes '16 and Lee tied for first with a time of 48.84, while Patrick K. Marx '13 was third in 49.32. Nick A. Diamantoni '15 was fifth in 50.73, Brian M. Gager '14 was seventh with a 51.06 and Daniel J. Ronde '13 came in eighth with a time of 52.17.

In the 5,000 meter, Matthew G. Jordan '15 was second with a time of 15:12.00, Kyle J. Hannon '13 was third in 15:19.00 and Allen K. Leung '15 finished fourth in 15:19.34. Michael S. Kaba was first in the 400 meter hurdles with a time of 54.58.

MIT won both the 4x100 and the 4x400 relays. In the 4x100, Michael J. DuPlessis '14, Kaba, Lee and Singer-Clark crossed the line in 42.60, just a tenth of a second ahead of Southern Maine's relay. In the 4x400, Kaba,

Marx, Ronde and Singer-Clark finished with a time of 3:17.03, leaving a gap of over four seconds between them and Southern Maine's relay.

Adrian C. Samsel '16 kicked off the field events with a second place finish in the high jump with a jump of 1.88 meters. He was followed by John B. Thomas '15 and Matthew D. Falk G in third and fourth, both with jumps of 1.83 meters. Cyrus Vafadari '13 won the pole vault in 4.60 meters. David C. Motley '15 was second in the long jump with 6.37 meters and first in the triple jump with a jump of 13.47 meters. Angel S. Echevarria '16 finished directly after him in the triple jump with a jump of 13.31 meters.

MIT will return to action today, traveling to Princeton, N.J. for the Larry Ellis Invitational.

—Charlotte Brackett

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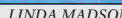
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Sam Shames '14 finished an undefeated season by winning his weight class

SPORTS STAFF

Also competing at the tournament were Bee Vang '13, making his fourth appearance at the tournament, and Tyler C. Laprade '13, Lawrence A. Chan '16, and Max L. Powers '13, who each made their first appearance. In addition, head coach Tom Layte, who has been the MIT head coach for the past 12 years, was named NCWA Coach of the Year.

This season marks the 100th anniversary of wrestling at MIT, making the win that much more memorable. Several of the coaches and team members have provided quotes about what this season has meant to them.



Ryan J. Madson '13 tries to lock up a cradle and score a takedown. Madson won this match with a score of 14-1.

everyone at practice every day giving maximum effort, not only to make themselves better but also their teammates. Without work out partners who consistently pushed me, I would not have achieved my goals, and without teammates who pushed each other, our team would not have won Nationals.

ters is reassuring as an athlete. All of our coaches have dedicated so much time and energy into each individual on the team that more than anything else our success reflects their hard work and dedication. Individually, I would not have achieved my goals this year without the culmination of three years worth of coaching. The reason we were so successful as a team is because our coaches help us to work harder and smarter than any other team in the country. The fact that our coach won National Coach of the Year demonstrates just how great a job he is doing."

—Sam Shames

of fatigue and get themselves to the next level. The great thing is this also helps them in their everyday life, especially when they have a difficult task at hand. Two of my favorite quotes are "once you have wrestled, everything else is easy" and "anyone can play a sport, but not everyone can wrestle". This sport demands all of your mental and physical strength all the time. Every day you step on the mat, your opponent is trying to break your will. The team has bought into this philosophy and this is why we won the NCWA Division 2 national team title and why Sam Shames won an individual national title while becoming MIT's first wrestler to have an undefeated season going 31-0.

It is extremely difficult to study at MIT and be successful in wrestling. However, for Ryan Madson and Bee Vang it was not. Both of these young men have been on the team and have been the leaders for the past 4 years. They are the epitome of what a student-athlete is. They always made wrestling a priority, never missed a practice or meet and this is why they had the success that they did. Bee was a 4-time NCWA national qualifier and Ryan is the first wrestler at MIT to become a 4-time NCWA All-American. These two young men are great leaders and will be very successful in anything they do. This is why I coach."

—Tom Layte

"I am a graduating senior and I've been part of the team for the past four years. The wrestling team is like an extended family to me. It is a place where I can remove myself from the rigorous and demanding academics of MIT and just focus on myself. It was two hours in the day where I knew I didn't have to work or think about MIT. It was two hours where I work to improve my mental and physical health through wrestling. Through wrestling, I learned about work ethic, perseverance, and character. Imagine someone at the brink of exhaustion and then asking them to push themselves for another minute, another second. Many people will give up and back down, but this is what a wrestler deals with everyday. And through this struggle, a person learns about him/her-self."

—*Bee Vang*

Senior is MIT's first four-time All-American wrestler

Madson balances athletics with Course 2 studies

SENIOR EDITOR

sport, and MIT is a demanding school. Balancing the two was difficult at first, but after some time I was able to figure out how much work was needed to be successful," said Madison. "Wrestling was also a good change of pace from the constant load of schoolwork during the semester." He spends most days focusing on studying and problem sets, fitting in daily workouts during the off-season and wrestling practices during the season along with some time to relax.

A Minnesota native, Madson joined the sport kindergarten partly because of its popularity. His father was a wrestler in high school and coached him during his early years in the sport. Although MIT cut the sport from

"It feels pretty good" to be the first All-American in MIT wrestling history, said Madson. "I never would have guessed my freshman year when they cut the team that I would be able to make my mark at MIT in this manner."

Madson credits the coaches who remained with the team after it was cut from the varsity program and his teammates for contributing to his success. "The wrestling team has been my family away from home," he said. "Trips with them to Nationals and other tournaments are by far some of the most memorable times of my MIT career."



Ryan J. Madson '13 finished fourth in his final national competition.